CLAIMS

What is claimed is:

1. A vaso-occlusive composition comprising a vaso-occlusive member and a material selected from the group consisting of fibrin; polyethylene glycol derivatives; thrombin-coated gelatin granules; balloons coated with iron microspheres, trace metals, thrombus-stabilizing molecules and combinations thereof.

2. The composition of claim 1, further comprising a bioactive material selected from the group consisting of

(i) at least one cytokine;

(ii) extracellular matrix material;

(iii) DNA;

(iv) RNA;

(iv) combinations of (i), (ii) and (iii); and

(v) functional fragments (i), (ii) (iii) and (iv).

3. The composition of claim 2, wherein the bioactive material is at least one cytokine.

4. The composition of claim 3, wherein the cytokine is selected from the group consisting of PDGF, bFGF, VEGF and TGF-beta.

5. The composition of claim 1, wherein the material comprises a trace metal.

6. The composition of claim 5, wherein the trace metal comprises copper.

7. The composition of claim 1, wherein the material comprises a thrombus-stabilizing molecule.

8. The composition of claim 7, wherein the thrombus-stabilizing molecule is Factor XIII or functional fragments thereof.

9. The composition of claim 7, wherein the thrombus-stabilizing molecule is plasminogen activator inhibitor-1 (PAI-1) or functional fragments thereof.

10. The composition of claim 7, wherein the thrombus-stabilizing molecule is α_2-antiplasmin or functional fragments thereof.

11. The composition of claim 1, wherein the material is adsorbed to the vaso-occlusive member.

12. The composition of claim 2, wherein the bioactive material is adsorbed to the vaso-occlusive member.

13. The composition of claim 2, wherein the material and the bioactive material are adsorbed to the vaso-occlusive member

14. The composition of claim 1, wherein the vaso-occlusive member is plasma treated.

15. The composition of claim 1, wherein the vaso-occlusive member is subjected to ion implantation.

16. The composition of claim 1, wherein the vaso-occlusive member is microtextured.

17. The composition of claim 11, wherein the vaso-occlusive member further comprises a tie-layer between the vaso-occlusive member and the material.

18. The composition of claim 1, wherein the vaso-occlusive member is selected from the group consisting of one or more vaso-occlusive coils, one or more filters, one or more retention devices and combinations thereof.

19. A method of occluding a vessel comprising administering to a subject in need thereof a vaso-occlusive composition according to claim 1.

20. The method of claim 19, further comprising administering a bioactive material selected from the group consisting of

(i) cytokines;

(ii) extracellular matrix molecules;

(iii) DNA;

(iv) RNA;

(v) combinations of (i), (ii), (iii) and (iv);

(vi) and functional fragments of (i), (ii), (iii), (iv) and (v).

21. The method of claim 19, wherein the cytokine is selected from the group consisting of PDGF, bFGF, VEGF and TGF-beta.

22. The method of claim 19, wherein the trace metal is copper.

23. The method of claim 19, wherein the thrombus-stabilizing molecule is selected from the group consisting of Factor XIII, α_2-antiplasmin, plasminogen activator inhibitor-1 (PAI-1), combinations thereof and functional fragments thereof.

24. The method of claim 19, wherein the vessel is an aneurysm.

25. A method of occluding an aneurysm comprising administering to a subject in need thereof a material selected from the group consisting of fibrin; polyethylene glycol derivatives; thrombin-coated gelatin granules; balloon coated with iron microspheres; trace metals; thrombus-stabilizing molecules; and combinations thereof.

26. The method of claim 25, further comprising administering a bioactive material selected from the group consisting of

(i) cytokines;

(ii) extracellular matrix molecules,

(iii) DNA;

(iv) RNA;

(v) combinations (i), (ii), (iii) and (iv); and

(vi) functional fragments of (i), (ii), (iii), (iv) and (v).

27. The method of claim 26, wherein the cytokine is selected from the group consisting of PDGF, bFGF, VEGF and TGF-beta.

28. The method of claim 25, wherein the trace metal is copper.

29. The method of claim 25, wherein the thrombus-stabilizing molecule is selected from the group consisting of

(i) Factor XIII;

(ii) α_2-antiplasmin;

(iii) combinations of (i) and (ii); and

(iv) functional fragments of (i), (ii) and (iii).

30. The method of claim 25, wherein the aneurysm is a neurovascular aneurysm.

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